Lately published, by LONGMAN AND CO., price 10s. 6d.,

THE

MECHANISM OF MAN:

A Popular Introduction to Mental Physiology and Psychology.

By EDWARD W. COX, Serjeant-at-Law.

President of the Psychological Society of Great Britain.

VOL. I.—THE MECHANISM.

Vol. II. will treat of "The Mechanism in Action."

CONTENTS OF VOL. I.

(*Continued on next page.*)

BOOK III.—SOUL.

OPINIONS OF THE PRESS.

We have said enough to show that "The Mechanism of Man" is a work of sustained interest and ingenious theories.—*Westminster Review.*

We can promise all a vast fund of information in these pages.—*Hampshire Telegraph.*

That Mr. Cox is not only an earnest advocate of the principle of truth as he conceives it, an elevated thinker, an intelligent teacher of the science he loves, but also an enthusiast, may be inferred from these few words, with which we may aptly conclude our necessarily brief review of his book. "Psychology will thus be seen to be a science as liberal as it is large. There is none so calculated to expand and elevate the mind, for its contemplations are of the past, the present, and the future of man; its issues are annihilation or immortality."—*Lloyd's Newspaper.*

This is a powerful manifesto against the doctrine of materialism, and it is made by exactly the sort of person whom one would like to hear on this question—a hard-headed practical lawyer; one accustomed to weigh evidence, and not likely to be led astray by high-flown language or visionary ideas. The author is the well-known Recorder of Portsmouth, Chairman of the Middlesex Sessions, and the writer of law treatises, one of which is in the seventh and another in the eleventh edition. . . . A most able and interesting work.—*Brighton Guardian.*

We think Serjeant Cox has succeeded in establishing his proposition (the existence of Soul as an entity distinct from the body) on unimpeachable grounds of reason, and that his work will have a most useful effect on the many whose faith has been disturbed.—*Sheffield Independent.*

The reader will be struck with the popular way in which the subject is treated, and with the amount of independent thought which is manifested throughout the volume. They are topics of intensely human interest, and they are handled by Serjt. Cox with a power of statement and illustration which will be appreciated wherever the book is introduced.—*Bristol Mercury.*

We recommend the volume to the careful study of every thoughtful man, and with an almost impatient anticipation look for the appearance of further treatises on kindred subjects by the same hand.—*Somerset County Gazette.*

This volume opens up a very wide and deeply interesting study—interesting from innumerable points; and to all honest students of nature and science, full of invaluable thoughts and suggestions. Mr. Cox takes nothing for granted; he begs no part of the great and abstruse questions which he sets out to examine, but he goes carefully and patiently into a searching investigation of the most minute details and branches of his subject.—*Birmingham Daily Gazette.*

Mr. Serjeant Cox is a gentleman whose whole being concentres on his subject. So perfectly is he at home in it that an uncommon ease and pleasant garb adorn all his chapters. . . . It is a felicity to all thinking men to see a high member of the Bar devoting to such topics those energies which many a man may possess but has not the will to exert.—*Leicester Daily Post.*

To those who care to wander in the obscure border land that lies between the material and the spiritual, there is alike in its facts and fancies material for most interesting thought and speculation.—*Ayr Advertiser.*

Notices of the Last Edition.

Few books more remarkable than this have been issued of late.—*Eastern Daily Post.*

The entire work is of absorbing interest.—*Civilian.*

The legal mind of the author displays itself here in a very characteristic manner, for all through there breathes the spirit of one who will be content to take nothing for granted—nothing, in short, that is not proved.—*Somerset Gazette.*

All lovers of physics will find much to delight them in the earlier pages of the work, where the author discusses the nature and condition of our animal structure.—*Standard.*

Thoughtful, and calculated to make its readers think.—*Graphic.*

A most useful and charming work.—*Standard.*

Revelations full of interest.—*Leicester Daily Post.*

(*Continued on next page.*)

OPINIONS OF THE PRESS (*Continued*).

There is in this, and through the volume generally, much to challenge the attention of reflective readers.—*Bristol Mercury.*

A thoughtful and remarkable book, full of original and suggestive ideas.—*Builder.*

The work will be found of the greatest value, not only to the scientific scholar, but to every reader who is desirous of knowing himself.—*Irish Daily Telegraph.*

A difficult task, but one which the writer has shown his ability to deal with.—*Brighton Times.*

A work that may be very profitably read, and deserves much careful thought.—*Figaro.*

The spirit throughout is that of a man who seeks truth only, and who desires to promote its search by others.—*Edinburgh Daily Review.*

Mr. Serjeant Cox's book is full of thought, and well worth reading.—*Morning Post.*

He has a way of seizing the central *nodus* of a difficulty with a swift and sudden grasp that one can't help admiring.—*Literary Churchman.*

The result of deep investigation, careful and laborious research, and extensive reading.—*Chester Courant.*

LONDON: LONGMAN AND CO.

HEREDITY AND HYBRIDISM:

A SUGGESTED SOLUTION OF THE PROBLEM.

By Mr. SERJEANT COX,

President of the Psychological Society of Great Britain.

PRICE 3s. 6d.

LONGMAN AND CO., PATERNOSTER ROW.

Recently Published, Price 7s. 6d.,

THE

PRINCIPLES OF PUNISHMENT

AS APPLIED IN THE ADMINISTRATION OF THE CRIMINAL LAW BY JUDGES AND MAGISTRATES.

BY MR. SERJEANT COX,

Chairman of the Second Court of Middlesex; Recorder of Portsmouth.

It is very seldom that a book so thoroughly satisfactory to the lay as well as to the legal mind has been given to the world. We can only wish that passing an examination based upon it were made a *sine quâ non* in all judicial and magisterial appointments.—*Morning Advertiser.*

The learned Serjeant has succeeded in laying down many broad rules for the guidance of magistrates.—*Lloyd's News.*

No better book has in these later days been produced for the young county magistrate.—*Globe.*

The work will be of great assistance to the magistrate and judge.—*Court Journal.*

LONDON: "THE LAW TIMES" OFFICE, 10, WELLINGTON-STREET.

[TURN OVER.

The following Works are also by MR. SERJEANT COX:

THE PROVINCE OF PSYCHOLOGY.
INAUGURAL ADDRESS.
Price One Shilling.

THE SECOND SESSIONAL ADDRESS.
Price Sixpence.

THE
PROGRESS and PROSPECTS of PSYCHOLOGY.
Price Sixpence.

SOME PHENOMENA of SLEEP and DREAM.
Price Sixpence.

THE
PSYCHOLOGY of MEMORY and RECOLLECTION.
Price Sixpence.

MATTER and SPIRIT: a DEFINITION.
Price Sixpence.

SOME MORE PHENOMENA OF SLEEP AND DREAM.
Price Sixpence.

HAS MAN A SOUL?
ANSWER TO PROFESSOR TYNDALL.
Being the Fourth Sessional Address to the Society.
Price Sixpence.

A MONOGRAPH ON SLEEP AND DREAM;
THEIR PHYSIOLOGY AND PSYCHOLOGY.
Price 3s. 6d.

SPIRITUALISM ANSWERED BY SCIENCE;
WITH THE PROOFS OF A PSYCHIC FORCE.
Price 2s. 6d.

LONGMAN AND CO., PATERNOSTER ROW.

A MONOGRAPH

ON

SLEEP AND DREAM:

THEIR

PHYSIOLOGY AND PSYCHOLOGY.

BY

EDWARD W. COX,

PRESIDENT OF THE PSYCHOLOGICAL SOCIETY OF GREAT BRITAIN;

AUTHOR OF

"*The Mechanism of Man*," "*Heredity and Hybridism*," *&c.*

LONDON:

LONGMAN AND CO., PATERNOSTER ROW.

1878.

PREFACE.

SOME papers on the Phenomena of Sleep and Dream, read before *The Psychological Society of Great Britain*, having excited much interest and caused considerable discussion, I was requested to put them into the more formal shape of a treatise. For this purpose I found it necessary to recast and rewrite the whole.

The modern endeavour to pursue Psychology, as all the physical sciences are now pursued, by the study of facts and phenomena, instead of by metaphysical abstractions, consulting of inner consciousness and argument *à priori*, has invested the subject of this monograph with extraordinary importance, because Sleep and Dream are familiar physical and psychical conditions, disputed by none and which cannot be ascribed to pre-

possession, dominant ideas, or diluted insanity. Therefore a profound, fearless, and searching investigation of their characteristics, causes, and operations could not fail to throw a flood of light upon many of the seeming mysteries of mental philosophy and psychology, promising a solution of some most difficult problems of life and mind, and revealing to us—as do the phenomena of dream—much of the structure and action of the Mechanism of Man.

The marvel is that such obvious means of access to hidden springs of that mechanism should have been so long neglected by Physiologists and Psychologists.

In dealing with a subject so old and yet so new, I can do little more than *suggest* explanations of phenomena. I do not venture to *assert* them. Those suggestions are submitted to the reader to induce him to think and as subjects for further examination and discussion rather than as dogmatic assumptions of ascertained truths. The *facts* and *phenomena* reported are vouched for so far as my own means of ascertaining their truth

enable me; but *causes* and *conclusions* can of necessity be little more than conjecture until a much larger collection of the facts be made. To the gathering of such facts I hope this little book may stimulate many observers. I shall deem the communication of them a valuable contribution to science, and a favour to myself.

EDWARD W. COX.

CARLTON CLUB,
1*st January*, 1878.

CONTENTS.

SLEEP AND DREAM:

THEIR

PHYSIOLOGY AND PSYCHOLOGY.

CHAPTER I.

WHAT SLEEP IS.

SLEEP is necessary to the health of the human organism. The Mechanism of Man depends for its sustainment and reparation upon recurring seasons of rest.

The condition of sleep is probably a requirement of organic structure. So far as we can trace it, all animal life sleeps. There is almost conclusive evidence that vegetable life sleeps also.

In this respect organic structure differs from inorganic structure. Minerals do not sleep. Only things that have *life* sleep. Wheresoever life is there is probably (it is not *proved*) a conscious

individuality that "goes to sleep." As sleep seems, so far as we can trace it, to be an attendant upon consciousness, a requirement, in fact, of nerve structure, the sleep of vegetable life would appear to indicate the presence of consciousness.

But sleep is not a suspension of vital action. The processes conducted by the vital force continue their work in sleep often more vigorously. The intelligence, also, is not wholly suspended in sleep. The functions of nutrition are performed even more perfectly than in the waking state. Rest appears to be required mainly for the muscular structure and for the nerve system that moves the muscles. The senses are often wholly, always partially, sealed in sleep. But it is doubtful if this be the result of a requirement for rest by the senses. The more probable inference is that the suspension of the senses is necessary to the suspension of muscular action.

Sleep, therefore, may be defined in general terms as the suspension, more or less perfect, of the action of the external senses, so that they cease to convey vividly to the mind the impressions made upon them. The action of the Will is likewise suspended, so that it ceases to convey the commands of the mind to the body. Thus is the rest procured that is required for the body.

The entire mechanism of the body and mind does not sleep, but only a part of it. In sleep the *body* performs all functions necessary for its continued

healthy being. The *mind* dreams. The consciousness of the Individual Self is awake, for we note our dreams as they occur, believe that we are acting them and remember them afterwards.

CHAPTER II.

THE PHYSIOLOGY OF SLEEP.

VARIOUS conjectures have been advanced as to the precise physiological change that attends the condition of sleep. Some have located the source of sleep in the heart and others in the head. It was formerly a favourite theory that the action of the heart slackened and then the blood, flowing slowly through the brain, caused a kind of congestion there. This was, in fact, to look upon sleep as a species of coma that produced unconsciousness by pressure upon the fibres of the brain.

The later and better opinion is, that sleep is produced by the reverse of this process; that it is not a state of congestion but of collapse; that the blood flows *from* the part of the brain that sleeps, which is thus left in a state of depletion, with a consequent collapse of the brain fibres.

Observation of the actual brain of a man who had been trepanned and over a part of whose brain a movable silver plate was placed entirely confirmed this conjecture. In sleep, the convolutions of his brain were depressed; when awake, they resumed their normal form; when his mind was exerted, they swelled visibly.

Any reader who has been suddenly wakened may recal a sensation as of swelling of the brain by the blood rushing into it. This sensation was probably the result of the rapid erection of the flaccid brain fibres.

Other facts strongly support this theory. When the action of the heart is stimulated by any excitement, mental or bodily, sleep will not come. So long as the brain is busy we court sleep in vain. To induce sleep we apply remedies that tend to draw the blood from the brain to the extremities. A full meal engenders sleep; but not, as formerly supposed, by congesting the brain, but by attracting the blood to the stomach and so depleting the brain. Rapid motion in a cold wind causes drowsiness when warmth is restored. Why? The blood is borne swiftly back to the surface of the body and quits the brain. Many other instances will readily occur to the reader.

Note in another the process of "falling sleep." The eyes move more and more slowly, the eyelids descend, the head nods and droops, the limbs relax, the book falls from the hand. Usually, before positive sleep occurs, involuntary endeavours at resistance are made. The eyes open with a stare. Consciousness is regained with an effort and a start. The thread of waking thought is resumed. But it is for a moment only. Again the head nods, the eyes blink and close, the limbs relax. He is *asleep*.

What are our own sensations when we *go to sleep?*

Thought wanders. Ideas come straying into the mind unbidden and with no apparent association. External objects grow dim to the eye and sounds fall faint upon the ear. The communications of the senses to the brain are dull and uncertain. We are conscious that the power of the *Will* is relaxed. We strive to retain it. We recover it by an effort. We resume the work on which we were engaged. Vain the struggle. The thoughts wander still. The unbidden pictures flit again before the mind's eye. We are conscious of the relaxation of the limbs and the closing of the eyelids. Then we cease to be conscious of external existence. We sleep.

But we are not conscious of *the act* of falling asleep—for itself is a suspension of consciousness. With some sleepers sleep is, as they affirm, a condition of entire unconsciousness. These tell us they have no sense of existence until the moment of waking and that, however protracted their slumber, the moment of waking is to them as the moment after having fallen asleep. It is impossible to contradict those who thus affirm, for their mental condition in sleep cannot be read. But if a judgment may be formed from their *actions* in sleep, as talking and motions of the limbs, the probable explanation will be that they dream but do not remember their dreams. *All* dreams vanish from *their* memories as *some* dreams vanish from the memories of those who habitually dream.

If we observe the aspect of a sleeper, we note

the features placid, the breathing regular, the pulse soft and even, the limbs relaxed, the skin moist. Occasionally there are quiverings of the limbs and expressions of the face which betray the presence of mental emotions.

This is the *physiological* condition of Sleep.

We turn now to its *mental* condition.

CHAPTER III.

THE MENTAL CONDITION OF SLEEP.

Of all the phenomena exhibited in Psychology and Mental Physiology there is none more marvellous than that which is presented to every one of us every night. It only does not astonish us because it is so familiar. Perhaps the reason why so few have given a moment of reflection to its marvels is because they are seen so often. When the attention of the reader is more closely invited to these phenomena he will doubtless be surprised to find what a world of wonder is opened to him.

The passage from waking to sleeping is momentary. The closest observer of his own mental action fails to note it. But what a change is made in that moment! A complete mental revolution has been effected. The man himself has changed entirely. He has ceased to be a rational being! He is almost wholly severed from the external world, which exists for him no longer! His *Will* (which is the name we give to the *expression* of the Conscious Self) is paralysed. He has ceased to command his thoughts and his emotions. He has no control over his limbs. With the sole ex-

ception that he dreams, he is but a breathing clod. Of the forces that move his Mechanism, Life alone is active, working steadily and harmoniously as before. As we shall presently see, the other forces that move and direct the mechanism—the forces of *Mind* and *Soul*—are not inactive. But they have withdrawn from their waking work. They exist and their existence is manifest. But they have ceased to control and the mechanism has ceased to obey.

Some proof this—is it not?—that these Psychic Forces are distinct from the vital force and from the physical forces and have another origin. These phenomena of sleep supply further and most cogent evidence of the fallacy of the contention of the Materialists, that the vital force alone governs the mechanism of Man, and that all the forces that direct the mechanism are generated within the machine.

In sleep the vital force continues to do its normal work. At the same moment some other force or forces are engaged in doing abnormal work, thus establishing the fact that some force or forces, other than the vital force or the physical forces, are employed in moving the mechanism of Man.

Pause to think for a moment what is this wonderful mental change that in a moment converts *the Man* into something less than a mere animal—into little more than a senseless vegetable!

What, then, is the *mental* process of sleep?

The first perceptible signs of its coming are what are well called "wandering thoughts." The Will resigns its control, at first fitfully, then at intervals continually diminishing. Nevertheless the Will strives to retain its hold upon the brain, then relaxes, then seizes it again, but with ever lessening power. "*Attention*" to the subject before the mind wanders—is recalled—wanders again—and then ceases altogether.

With this relaxation of the *Will*, and consequently of "attention,"—which is an effort of the Will—ideas begin to flow unbidden into the mind. At first they are banished almost as soon as they appear. But presently they return and disturb the train of waking thought; then they mingle with it; then they put it altogether to rout, and usurp its place. At the beginning, we are competent to sever the intruding ideas from the true ones and we make an effort to banish them if we desire to be wakeful. But they return ever more vividly and persistently, until at length they take possession of the mind. If we are courting sleep, we welcome the intruders and willingly resign the control of our thoughts. In either case the state of actual sleep occurs at the instant when the *Will* ceases to work and *attention* ends.

Then begins the condition of *Dream*, to be treated of presently.

Our business now is to trace, so far as we can, the *mental* change that attends the condition of

sleep. The phenomena just described are the action of the mind in the process of *falling asleep* The *state of sleep* presents other features.

The mental condition of sleep, apart from dream, is very remarkable and should be carefully noted and remembered by the Student of Psychology.

The *Senses* are suspended—but not entirely. They are rather dulled than paralysed. We hear, but imperfectly, and we are unable to measure the sound. Often a loud noise is not heard when a whisper wakens; or a slight sound seems to the sleeper like the report of cannon. The sense of touch is only dulled, as we know by the manner in which it influences dream. Whether the sense of sight ceases entirely we cannot know, because the eyelids veil the eyes and external impressions are consequently not made upon them. Taste and smell are dimmed but not effaced.

CHAPTER IV.

THE SEAT OF SLEEP.

These facts point to the conclusion that the partial paralysis to which the senses are subjected in sleep does not occur at the points of communication with the external world, but somewhere between the extremity of the sense-nerves and the brain, or at the point of communication between the brain and the Conscious Self. There can be little doubt that impressions are made upon the nerves in sleep as when we are awake. There is some evidence that the impressions so made are conveyed by the afferent nerve to the ganglion at the base of the brain hemispheres. The experiments of Professor Ferrier have proved this ganglion to be the centre upon which the sense-nerves converge; that to this centre those impressions are conveyed and thence are transmitted to the brain hemispheres, or at this point the hemispheres of the intelligence receive notice of their presence.

In Sleep the brain is unable to convey its commands to the body. The nerves do not obey. Something that operates between the brain and

the nerves and which was active in the waking state is inactive in sleep. What is that *something?* It is the *Will.* The Will has ceased to act and thus the body has ceased to be controlled by the mind. This is the process by which the needful rest of the body is brought about.

Here the question comes, in what part of the mechanism does the change occur that thus causes the suspension of the power of the Will and the partial severance of the Conscious Self from its normal control of the body? *How* does sleep accomplish so great a revolution? If the whole mental mechanism were inactive in sleep this question would be answered easily. We should say, "the entire of the brain is sleeping and therefore the whole mechanism is at rest. The motive forces that move and direct the machine in its waking state have ceased for a time from their work and the structure stands still."

But that is not the condition. All the forces have not ceased from their work. The vital force continues in full activity, keeping the machinery in motion and performing the work of nutrition, reparation and growth. The *mind* is not at rest; the phenomena of dream directly contradict such a conclusion. The whole mental mechanism is certainly not at rest. A part of it is very busy. The hemispheres of the brain are not sleeping—or sleeping but partially. They are enacting dreams. They are in truth working with infinitely greater

speed and power when we are asleep than when we are awake!

If, then, the brain hemispheres are waking above and the body is sleeping below, the communication between them must be severed by sleep at some part of the mechanism below the brain hemispheres (which are the mechanism of the Intelligence) and the point where the brain branches into the nerve system—which is the mechanism by whose action the vital force forms and sustains the organic structure.

That point is obviously the point at which the Will exercises its power of control over the body. Thus does this inquiry into the Psychology of Sleep and Dream promise to throw light upon that mysterious part of the mechanism of man. Professor FERRIER has proved that *the Will* is exercised through the brain hemispheres, which are the organs of the Intelligence. In the waking and normal condition of the structure the Will commands and controls the body. In sleep and other abnormal conditions the Will ceases to command the body. Between the brain hemispheres and the nerves that move the body something seems to be interposed which either paralyses the Will or ceases to transmit its commands. What is that *something?* Anatomically we find two ganglia, one being the centre upon which the nerves of the senses converge. We know, also, that in sleep the senses cease to transmit their

impressions, or do so but dimly. The conclusion is, that the seat of sleep is in this ganglion. Because that is slumbering, the commands of the Will cannot be conveyed from the brain to the body, nor can the messages sent by the senses from the body be conveyed to the brain.

It is a moot point if the entire of the mechanism of the brain, or parts of it only, and, if so, what parts, fall into the condition of sleep. But, however that may be, there can be little doubt, from the facts stated above, that the ganglion at the base of the brain hemispheres is the seat of sleep. It is certain that the entire of the two brain hemispheres does not always sleep or dream could not be. Whether the ganglion that interposes between the cerebral centre and the body, and whence streams the nerve system, succumbs to sleep we have no certain knowledge. The presumption is that it does not, for the nerves whose office is to sustain the functions of the vital organs do not sleep. Why they need not the rest that is required by other parts of the mechanism we do not know. Rest appears to be necessary for that portion of the mechanism only that is subject to *voluntary action.* Where *the Will* controls, the repose of sleep is required for all structure subjected to it. Why?

Does the nerve system that moves the mechanism of the body sleep? The bonds that link brain and body are relaxed. The Will has ceased to control

either of them. The material form is at rest. But it rests only because the power of the controlling Will is paralysed. All *in*voluntary actions continue and with the more regularity and efficiency because they are not subjected to the disturbing influences of the Will.

And what is this potent Will ?

The Will is merely the expression of the Conscious Self—the power which the Conscious Self exercises over the material mechanism of the body and through the body upon the material world without.

CHAPTER V.

OF DREAM.

As already stated, at the first approach of sleep we are conscious of inability so to control our thoughts as to keep them in the orderly train they had been pursuing previously. Ideas come uncalled for. Pictures rise before the mental eye and vanish instantly. Other pictures intrude, having no apparent association with their predecessors. They enter and pass before us unbidden. The mind falls into confusion. There is entanglement of the threads of thought. Even while the eye is yet open, the objects on which it gazes fade and vanish. Sounds fall faintly upon the ear and die away. The vision of the mind grows dim or is eclipsed by other unsummoned pictures, often altogether incongruous, which blend with the picture present, then melt into it, then usurp its place, and then are in their turn displaced. We are conscious that we can no longer control the movements of the mind. Momentary resistance to the influence but provokes its more vigorous return. For an instant we wake with a start to consciousness of the external world. If we desire to resist the coming

on of sleep, we exert the Will fitfully, start into waking life for a few moments, contract the relaxed muscles, open the drooped eyelids, stare with a peculiar expression of imbecile amazement, strive to look as if we had *not* been surprised by sleep, and for a while the mind resumes its normal action. But soon again the thoughts are dislocated and replaced by a swarm of yet more dissevered ideas. We feel again the dropping lid, the relaxing muscle, the nodding head. Strive as we may, we are unable to note the moment when unconsciousness begins. We remember *falling asleep*, but we do not remember, and no human being has ever yet remembered, the very act of *going to sleep*.

The mental condition of *falling asleep* resembles very closely the dissolving views at exhibitions. So do the pictures of the mind steal into the field of view and mingle and melt away; nor can we discover where one ceases and the other begins, so imperceptibly do they glide in and blend.

We sleep.

What is then our *mental* condition?

It is a condition of *partial unconsciousness*. In this respect it differs from the condition of coma and of trance, in which there is *entire* unconsciousness. In the most profound sleep perfect unconsciousness never prevails. Impressions may be made upon the senses of the soundest sleeper that will waken him. The degree of oblivion caused by sleep varies immensely with various person

and with all persons at various times. Some are "light" and others "heavy" sleepers. Some are wakened by the slightest noise or the gentlest touch. Others will slumber, though rudely shaken, or while cannon are roaring. It is a remarkable fact, not yet sufficiently explained, that a whisper will often waken a sleeper by whose side a gun might be fired without disturbing him. Others will answer aloud to questions whispered to them when sleeping, and there are recorded cases of conversations being thus sustained and inconvenient revelations made by the sleeper which have astonished him on their subsequent repetition—there being in such case no after memory of the dialogue so strangely conducted.

The *senses*, therefore, are but partially sealed in sleep. They are dulled, not paralysed. They convey imperfect sensations—or the sensations conveyed are imperfectly perceived—we know not which. As will be shown presently, they more or less influence mental action. They suggest dreams. But their reflex action has ceased. The nerves that convey the messages to the brain are sluggish. The nerves that convey the consequent message from the brain to the body are for the most part inactive.

The aspect of the sleeper to the observer is that of unconsciousness. There are occasional motions of the limbs, but these are involuntary. He seems dead to the external world and to have ceased from active life.

Nevertheless, while that form is so still and seemingly so senseless—while consciousness of a world without is suspended—in this sleep that has been called the twin brother of death—the senseless sleeper is making a world and living a life of his own within himself. That brain is not sleeping with that body. It is awake and busy—often more busy than when the body is awake. It is enacting whole dramas—living new lives—wandering away among worlds of its own creation—crowding into an hour the events of years—doing, saying, seeing, hearing, feeling, even while we gaze, a hundredfold more than the waking senses could possibly convey or the waking frame perform.

Is it not marvellous when we thus think of it? Would it not be pronounced incredible—impossible—the narrator a "rogue and vagabond"—the believer a credulous fool—were it not that it is *a fact* familiar to all of us? Is it not in itself as marvellous as any of the phenomena of other abnormal mental conditions, which are received with such incredulity and ridicule only because they are of less frequent occurrence and less familiar?

But before we pursue the inquiry into the phenomena of Dream, it will be necessary to describe the material mechanism by the operations of which those phenomena are produced. This will be properly the theme of a distinct chapter.

CHAPTER VI.

THE MATERIAL MECHANISM OF DREAM.

It is difficult to describe, without the use of technical terms, the structure of the mechanism by which Dream is produced. But as these are at once unintelligible and repulsive to the non-scientific reader, indulgence is entreated for an endeavour to present the subject in shape and language that may be understood by everybody.

It must be premised that this description is partly derived from the recent treatise of Professor Ferrier on "The Functions of the Brain,"* in which he details the experiments that have thrown so much light alike upon physiology and psychology.

The spinal cord expands at its upper end into a ganglion or cluster of nerves called the *medulla oblongata*.

At this point the brain is said to cease and the nerve system to begin. But there is no perceptible beginning nor ending either of the brain or of the nerves. The entire nerve system is, in fact, only

---

* *The Functions of the Brain.* By David Ferrier, M.D., F.R.S. London: Smith, Elder, & Co., 1876.

an extension of the brain. When a nerve is irritated at the point of the finger the brain as well as the nerve is affected. The nerve transmits the sensation and the brain feels it. Psychologists would venture a step further, and say, "It is not the brain that feels, but the intelligent individual entity, the living soul or self, of whom the brain is only the material transmitting organ."

It is at the extremity of this ganglion that the cords wrapped within that great bundle of nerve cords which constitutes the spinal cord cross each other and pass into opposite sides of the brain and of the body. The nerves that control the left side of the body pass into the right side of the brain, and those that control the right side of the body pass into the left side of the brain. As the consequence of this exchange, the right side of the brain controls and directs the left side of the body, and the left side of the brain the right side of the body.

Above this basal ganglion, but connected with it, is a ganglion which anatomists have divided into two parts, but which for the present purpose it will be convenient to recognize as one whole lying at the base of the brain and crowned and inclosed by the cerebral hemispheres. From this great basal ganglion small white threads radiate into the two cerebral hemispheres in the form of a hollow cone.

Above the basal ganglion lies another great

ganglion (the *cerebellum*), also divided into lobes, and which is connected with the basal ganglion by two bands (or peduncles). It is connected also with the two cerebral hemispheres by two bands. It is connected with the central ganglion by a thin lamina, which stretches to the other ganglia, thus connecting all the ganglia with the centres of the senses and the centres of motion—that is to say, with the centre that receives the messages of the senses and with the centre that conveys the commands of the Will to the body.

Above and extending in front of these are the *cerebrum*, the organ of the intelligence, composed of two hemispheres, which crown, inclose, and overlap the ganglia at the base of the brain.

These two great hemispheres are distinct bodies, each complete in itself but united by fibres that pass from one hemisphere to the other and thus secure their united action. These fibres are observed to connect together corresponding regions of the two hemispheres.

At their bases the two hemispheres are in direct contact with the ganglion above described as the central ganglion, but which has been anatomically subdivided into two pairs of ganglia. For the purposes of this treatise, however, minute divisions are not necessary.

This ganglion is the centre upon which all the nerves of the senses converge and each division of it is supposed to be appropriated to a distinct

sense. But even if each part has its own work to do, it is not less a whole than is the cerebral hemisphere, which is now proved to have various parts devoted to various mental operations.

The cerebral hemispheres are formed of great bundles of fibres, in the shape of rolls, plainly visible on the outside, but which baffle the attempts of the most dexterous anatomist to sever them below the surface.

And the whole brain is covered with an extremely delicate and highly sensitive membrane, which is now conjectured to be the medium by means of which all the parts of the brain are brought into communication, and the co-ordination and unity of action of the entire organ preserved.

The substance of the brain itself is insensible, although it is the recipient and supposed seat of the pains and pleasures of the body—or rather of the nerves, for what we call the body is only the insensible clothing of the nerves. The nerves feel; the flesh and bones do not feel.

Is not this fact another powerful argument *against* the doctrine of the Materialists that consciousness and mind are only states of brain or conditions of matter? If the brain is not conscious of injuries done to itself, if it is insensible even to its own destruction, how can it be the "*Conscious* Self?"

But the enveloping membrane of the brain is exquisitely sensitive. It is the seat of headache,

of *delirium tremens*, of brain fever, of hydrocephalus, and probably of many more diseases which we are wont to refer to the substance of the brain.

We refer—*Who* refers? *What* refers? The brain to the brain? Or one part of the brain to another part of the brain? Will the Materialists explain.

It is probable that this envelope of nerves unites all the parts of the brain and by transmitting to each part the condition of all the other parts produces co-ordination of the parts and unity of action. But this membrane of nerve cannot surely be deemed by the most bigoted Materialist to constitute the Conscious Self.

Professor FERRIER has proved, by a multitude of minutely detailed experiments, that not only has each ganglion its function, but that each part of each ganglion is devoted to some special duty, thus completely shattering the theory that holds every mental operation to be an act of the whole brain. He establishes at least the grand basis of modern mental Science, the assumption that the brain is the material organ of the mind; that distinct parts of the brain are devoted to distinct mental operations; that not the whole brain, but only parts of it, are employed in any mental operation. The question is still open for observation and experiment to ascertain what are the parts of the brain so appropriated and what are the precise functions of each part.

Professor FERRIER has made considerable advances towards the determination of this question. His experiments have demonstrated what are the functions of the ganglia at the base of the brain, not being the seat of the Intelligence. His experiments were attended with more cruelty than I could excuse even for the important accessions they have brought to our knowledge. But they are not therefore the less valuable as contributions to Physiology and Psychology. I can but briefly describe the results of such of them as bear immediately upon the subject here treated of.

Let me, however, first confirm, by the authority of Professor FERRIER, the proposition I have ventured to advance as to the various functions of various parts of the brain.

"That the brain is the organ of the mind," he says, "and that mental operations are possible only in and through the brain, is now so thoroughly well established and recognized that we may, without further question, start from this as an ultimate fact." He proceeds:

The physiological activity of the brain is not, however, altogether co-extensive with its psychological functions. The brain as an organ of motion and sensation, or presentative consciousness, is a single organ composed of two halves; the brain as an organ of ideation, or re-presentative consciousness, is a dual organ, each hemisphere complete in itself. When one hemisphere is removed or destroyed by disease, motion and sensation are abolished unilaterally, but mental operations are still capable of being carried on in their completeness through the agency of the one hemisphere. The individual who is paralysed as to sensation and motion by disease of the opposite side

of the brain (say the right), is not paralysed mentally, for he can still feel and will and think, and intelligently comprehend with the one hemisphere. If these functions are not carried on with the same vigour as before, they at least do not appear to suffer in respect of completeness.

As the object of this treatise is not anatomy but psychology, it will be unnecessary to describe minutely the entire of the brain structure. It will suffice for the present purpose to view the brain, above roughly sketched, as having three well marked divisions, each with definite and distinct functions.

The ganglia at the base of the brain govern the actions of the body. The ganglia in the centre of the brain are the recipients of the impressions made upon the senses and thus connect us with the external world. The two hemispheres at the summit of the brain are the organs of the Intelligence.

Professor FERRIER'S experiments were made with a view to ascertain whether the theory of Dr. CARPENTER is true, that the whole brain works in each mental action, or if the phrenological doctrine be the true one, that the several parts of the brain have several and distinct functions. Dr. CARPENTER had prematurely boasted that he had killed Phrenology. The boast would have been justified if his assertion (for it was merely a dogma, not a proved fact) had been found to be true. But Professor FERRIER'S experiments have decisively *disproved* the boast of Dr. CARPENTER and killed his theory of mental unity.

The experiments were conducted chiefly with monkeys and dogs. The former were the most valuable, because the brain structure of the monkey is almost identical with that of man. The experiments were certainly cruel and I should object to procure even such valuable knowledge at such a price. But, as it is obtained, we may use it.

The experiments were performed by making the animal insensible by chloroform and then extracting in mass certain portions of the brain, or destroying parts of the brain by the actual cautery. Electrodes were applied to the various parts of the brain to which access had been thus obtained and their effects upon the actions of the animal were carefully observed.

I will not attempt to detail these experiments—but merely state some of the results. For the many important facts that were discovered by them reference must be made to the valuable volume in which they are reported.

He found the entire brain to be connected with the nerve system by the process of interlacing. Excitation of the right brain was shown by the left side of the body; of the left brain by the right side. So it was with the nerves of the senses. Whether the like structure exists in the duplex organ of the intelligence he could not trace, because the mental results were incapable of being expressed by experiment upon animals, who cannot tell us what

are their emotions. But he entertains no doubt that the same structural scheme is observed in the action of the two hemispheres also.

The great ganglia at the base of the brain, whether excited by electricity or destroyed by cautery, yielded the same result. They proved beyond doubt that *their* function is to direct the actions of the body under the peculiar conditions of its duplex structure—that is to say, a formation by two distinct and not wholly similar halves joined together and requiring community of action. This process of separate action for each part combined with motion in *co-ordination*—that is to say, the regulation of the motions of the limbs, so that the two halves of which the body is builded may act in definite relationship—was found to be the special business of those basal ganglia, any disturbance in those ganglia being attended with imperfect movements of the body, even to the extent of causing the animal to walk in a circle, having lost entirely the power to "walk straight." The results of this ingenious experiment are extremely curious and throw great light on the physiology of locomotion.

The second division of the brain, lying in its centre, overlapped behind by the cerebrum, resting on the centres that direct bodily actions and dominated by the hemispheres that are the organs of the intelligence, is shown by these experiments to be the centre upon which the senses converge. To

this common centre the impressions made upon the senses by the external world are conveyed. The experiments seem to indicate that a distinct ganglion is devoted to each sense, although all are united in one mass for the common purpose of reception of the information they bring. The destruction of different parts of this brain centre is found to be followed by the loss or impairment of different senses. It was found, also, that this part of the brain was duplex, like the other parts, for destruction of the right side of the ganglion caused paralysis of the senses on the left side of the body and *vice versâ*.

A question of much interest arises here. What is the precise function of this sense-receiving portion of the brain? Is *itself* perceptive of the sense-impressions brought to it, or is it merely the medium for transmitting those impressions to the hemispheres above? That in health it does communicate to the intelligence the same impressions that it receives there can be no doubt, for we take cognisance of them in almost every mental act. We know also that when the brain is diseased false impressions are conveyed to the Intelligence. But in exploring the psychology of Sleep and Dream, it would be of great advantage to ascertain if the same receiving portion of the brain is an active or merely a passive agent.

The experiments of Professor FERRIER are almost conclusive upon this most important point.

He removed the two brain hemispheres of a monkey and of a dog. The animals lived and appeared to enjoy health, but *they had lost intelligence.* They had not, however, lost the use of the *senses* and they were manifestly conscious of the impressions brought by the nerves of sense. The external world continued to exist for them and was perceived by them as before the organs of the intelligence were removed. But when this central division of the brain was taken away and nothing left but the lower lobes that govern muscular motion, all the senses ceased to act, or consciousness of action had ceased. Nevertheless the power of locomotion and the co-ordinate action of the limbs was preserved with very little loss of power.

Above the central sense-organ tower two hemispheres—*two* brains, each distinct and complete in itself and each capable to act without the other. The function of these hemispheres is that we term *mental.* They are the organs of the intellect and of the sentiments. Through them we think, reason and feel. Injury to parts of these injures more or less, *not* the *whole* mind, but *parts of the mind*—certain mental faculties only. Destruction of the entire of these hemispheres is not death but idiotcy.

Let it then be clear in the mind of the reader, when surveying the phenomena of sleep and dream and inquiring into their causes, that for the purpose of such an outline of the Physiology of the

Mind as this, the brain is to be viewed by him as having *three* marked divisions—the organ of the *intelligence* at the summit, of the *senses* in the centre, of *bodily motion* at the base.

There are many sub-divisions of the brain known to anatomists and necessary to be known by the Student of Physiology. But these will suffice for the Student of Psychology. They are easily understood and readily remembered.

In the waking and normal state, the whole brain is awake, all its parts acting in concert and preserving strict co-ordination. The reasoning faculties correct the senses; the senses correct the imagination; the intelligence controls the emotions; the emotions give vigour to the Will; the Will commands the entire mechanism of the body and expresses upon the external world the results of that combination of intelligent actions and emotions which we term "*the mind.*"

In sleep this relationship is changed. The reasoning faculties cease to correct the senses; the senses no longer correct the imagination; the emotions are unable to influence the Will; the Will loses its command of body and mind alike.

However it may be in dreamless sleep, in the condition of dream the entire mechanism certainly does not sleep. Some part of it is awake and active. What is that waking part?

It is undoubted that the cerebral hemispheres are wholly or partially awake in the process of

dream. In deep sleep the sense-ganglia are wholly asleep. In all sleep the senses sleep, only sometimes not so profoundly as completely to exclude cognizance, by the Conscious Self, of the sense-borne impressions. Sleep affects also the ganglia at the base of the brain that control the actions of the body. This, indeed, would appear to be the primary purpose of sleep. Sleep is obviously designed to give rest to the *material structure*—time for growth and renovation. It is for this reason that the Will, which in the waking state directs the motions of the structure, ceases to control it during sleep. The Will itself wakes — for we are self-conscious in dream — but in sleep the material mechanism does not obey the command of the Will, because itself is sleeping.

The central and basal portions of the brain are, therefore, the seat of sleep. Unless they sleep we do not sleep. If they sleep we sleep, even although both brain hemispheres are at the same time wide awake.

And this raises the question, so important in the Psychology of Dream; do the brain hemispheres, that duplex organ of the intelligence, sleep wholly or partially, or do they continue to be awake while the sense-brain and the body-moving brain are sleeping?

This problem can be solved only by careful examination of the phenomena of dream. Suppose

that Professor FERRIER could do with us as he did with the monkeys and dogs—take out a portion of the brain—and it were possible to remove altogether the middle and basal sections, leaving the hemispheres alone in the skull, would they sleep wholly or in part or, if awake, would they exhibit the phenomena of dream as they are now experienced?

Contemplate, then, if you can, a duplex intelligent brain, in a state of activity, but cut off from all communication with the external world through the media of the senses and from all control over the body;—in fact, an isolated, self-acting, self-contained mechanism, the organ of intelligence and emotion.

How would it work?

First, it must be set in motion. Thus we are brought directly to the problem "What moves the mind?" Why does *this* particular thought or feeling come into the mind at this moment rather than some other?

The solution commonly accepted is that ideas come by *suggestion*. This means that ideas are, as it were, linked together and consequently that when one idea comes it is followed by certain other ideas which at some former time were connected with it. Probably the greater portion of the ideas that come to us apparently without such association are suggested by some impression brought by the senses, but received by the sensorium unconsciously

to ourselves and that thus the "train of thought" is started.

If it be so in our waking time, when the mind is busy with a multitude of impressions flowing in upon it from every sense—much more is it likely so to be when the impressions made by the senses are few, as is proved by the experience of every reader. In sleep, a slight sound falling upon the ear will suggest a dream of roaring cannon or rattling thunder.

But the idea, once suggested, draws after it whole trains of associated ideas, and these ideas excite the *emotions* precisely as they would have done had they been brought by the senses in the waking state. Thus far, then, we learn that the faculties which produce what we call ideas and sentiments and passions are not asleep. Some, if not all, of them are certainly awake and as active as in waking life.

The Will, too, is not asleep, although powerless to command. In dream we *will* to speak and do, but the body does not obey the Will. The efforts of the Will to command the limbs to move—as to escape from dreamed-of danger—and the failure of the limbs to obey, are often attended with consciousness of painful efforts made in vain.

So far the phenomena of dream are consistent with the entire of the duplex brain organ of the intelligence being awake while the lower portion of the brain is sleeping. Certainly it is difficult to conceive

of parts of such an organ as the two hemispheres sleeping, relaxed, and insensible, while other parts of it are awake and active.

For, if Professor FERRIER is right, and distinct functions belong, not only to each ganglion but to various parts of each ganglion, the brain hemispheres, which are the material mechanism of the intelligence, must consist of many parts having different duties. We know that anatomically these parts, if they exist, are in intimate connection, lying closely packed together if not actually interlacing, and it is difficult to suppose that one part can be sleeping while its neighbour is awake, especially as sleep is attended, if not caused, by a depletion of blood from the fibres of the brain, retreating from the entire hemisphere and not from parts of it.

Nevertheless, there are characteristics of Dream which appear to indicate a suspension of activity in some parts of the intellectual mechanism. Although perfectly conscious of the presence of the dream, we are unable to discover that it is not real; we cannot discern incongruities, nor recognize impossibilities. The dead of long ago come to us and we are not amazed. We walk the waters and float in the air and are not astonished. Nothing is too impossible to be done and nothing too monstrous to be implicitly believed. We are, in fact, insane in dream.

What is the solution of this problem? Some

faculty that corrects the action of the mind when we are awake is certainly absent or paralysed during dream. Something must come to us from without or operate upon the mind within that restores us to sanity when we wake, enabling us then to discern the false from the true, the shadow from the substance, the impossible from the possible.

What is this absent faculty?

The solution most favoured by psychologists is that in sleep we lack the correcting influence of the senses. The mind, they say, having nothing wherewith to compare its own creations, necessarily accepts them as realities; it puts implicit faith in them, however monstrous, simply because they are presented to it as facts and in the same manner as facts are presented when it is awake.

I confess to great doubt if this explanation be adequate. True, that we believe the impossibilities of our dreams *to be* because they appear to the mind to be. But that does not explain the strange absence of perplexity and wonder when we witness (as we then verily believe) the dead alive, the distant near, and impossible things performed with ease. In our waking state, if the like dreams come into the mind at some moment of idleness, they are never mistaken for realities. Reason rejects them, and if entertained for awhile it is only as a pleasant vision. Nor is the problem solved by the suggested slumber of the reasoning faculties. These are not always asleep in dream, for often we dream that we are exercising

them readily and effectively. The power of reasoning employed in dream is, however, very limited. It can exercise itself on the subject of the dream, but not upon its surroundings. It is not uncommon for the sleeper to dream that he is making a speech or preaching a sermon. The discourse is argumentative and logical. It is not merely that he dreams he is logical; he is so in fact, for the dream is often remembered after waking and no flaw is found in the argument. Nevertheless, at the moment that our reasoning faculties are constructing a strictly logical and perfectly rational discourse, they are unable to inform us—as when we are awake they would have done—that the place where we suppose the speech to be spoken, the occurrence and the occasion, are not merely fictitious but attended with the most palpable absurdities.

Looking, then, at one hemisphere only of the brain, it is difficult to infer that one or more parts of it are sleeping while the other parts are awake. May the solution of the problem be found in the fact that we have *two* brains? Can it be that in the condition of dream one hemisphere—that is, one mind—is awake while the other is asleep?

To answer this it is necessary to inquire what is the action of *two* brains working, like the two eyes, together or separately?

For the common purposes of life the two brains act in complete accord. Like the two nerves of vision, they co-ordinate. Either can act alone for

the ordinary uses of existence, just as one eye will do the usual work of sight. But as we see more perfectly, extensively, and roundly with two eyes than with one—so it may be reasonably concluded that we think more truly and clearly, and feel more strongly, when the two brains act together than when one is working alone. The faculty of *comparison* is one of the most important of the mental powers, for it is the basis of accurate knowledge. But it is doubtful if this faculty can do its work in one brain unless co-ordinated with the same faculty in the other brain. Unlike the other mental faculties, "comparison" can exercise itself only upon *two* ideas. Its very purpose is to make us conscious of the resemblances and differences between any two ideas presented to it. All mental processes are successive—that is to say, no two mental actions are performed by the same mental faculty at the same instant of time. Consequently, the faculty of comparison cannot exercise itself without having before it *two* ideas to contrast. As one brain can present only one idea at any one moment, one brain cannot provide the materials wherewith comparison can work. The process of comparison cannot therefore be effected without the aid of the other brain. This, in healthy waking life, is done instantly, perfectly and unconsciously, by means of the power of co-ordination possessed by the two hemispheres.

Such being the action of the waking brain, does

sleep present any conditions that might be explained in like manner? Suppose the state of dream to be the slumber of one hemisphere only, the other being awake. May not this solve the problem?

In dream we believe shadows to be substances, ideas to be things, incongruities to be natural, and impossibilities to be realities; and so believing, we have no sense of surprise and reason is not shocked.

Nothing of these results presents itself when we are awake. Why?

Waking, the faculty of *Comparison* is enabled to do its work. It compares the idea with the reality, the shadow with the substance, the dream within with the impression without, the present picture of the mind with the stored knowledge of the past. The differences being thus discovered, the mind dismisses them as being the mere visions that they are.

The mental operation is performed somewhat in this manner. Two ideas are present in the mind, which compares them and traces their resemblances and differences. The sense-borne idea being thus brought face to face, as it were, with the brain-born idea, the distinction is discovered, and the latter is relegated to the limbo of visions, the former is accepted as a reality and made the basis of action.

But inasmuch as two ideas cannot be presented at the same instant of time by one brain hemisphere, the presence of the two ideas requisite to the process of comparison can be had only by the

combined action of both hemispheres. Hence the usual inability of persons afflicted with hemiplegia to compare or reason accurately.

If the action of the faculty of comparison were paralysed, we should dream when awake. The suspension of the action of this faculty in dream would suffice to account for the accepted incongruities of dream, without assuming the sleep of the entire hemisphere.

But, as observed above, it is difficult to assume the slumber of one mental faculty alone, packed as all are among many with which they are intimately united. It is more probable that in dream the entire of one hemisphere sleeps. The facts are in accordance with such a suggestion.

But, however this may be, it does not disturb the conclusion, that the seat of sleep is in the ganglia at the base of the brain. That portion of the brain which directs the motions of the body sleeps always. Sleep reigns more or less perfectly in the portions of the brain that receive the impressions of the senses. Sleep is very partial in the cerebrum, the duplex organ of the intelligence, and probably —(for it is as yet only conjectural)—partial sleep prevails there, if at all, by the contrivance of slumber by one hemisphere while the other is awake.

Such being the *Physiology* of Dream—so far as science has yet succeeded in tracing it—we proceed now to investigate its *Psychology*.

CHAPTER VII.

THE PSYCHOLOGY OF DREAM.

The base of the brain being quite asleep, the central ganglia being partially asleep, the cerebral hemispheres or some part of them being awake, we have the physiological condition in which occur the Phenomena of Dream.

The first coming on of Dream is found at the moment of "falling asleep," before actual sleep has begun. *Then* we *are* conscious for an instant that we are dreaming—that the mental impressions are not external realities. But this consciousness is for a moment only. Either we start into waking life and the incipient dream is banished, or we fall into actual sleep and the condition of complete dream is established.

The process is worthy of note. You are engaged in some occupation—say that you are reading a novel. You "feel sleepy;" your eyes continue to pass over the page; your mind pictures the persons, actions and emotions of the story. But by degrees the ideas become dim and shadowy and the *attention* flags. Then your mind wanders away to

other scenes and persons, which come into it uncalled for and even against your Will. But the power of that Will is lessening also. At first it is strong to banish the intruding thoughts; but as "the attention" relaxes more and more, so more and more does your Will cease to control the now thick-coming fancies. In that incipient stage of dream you know that these dream-pictures are only dreams. Never do you mistake them for realities. Soon the influence of sleep steals over the mind. The eyelids close and exclude the impressions of the external world that are made through the sense of sight. The other senses are paralyzed also. The creations of the brain take full possession of the mind. You are now *asleep* and *dreaming*.

If the condition of dream were not so familiar—if it did not occur to all of us, but only to some few persons in abnormal conditions, it would appear to the whole world as very wonderful. Suppose that dreaming were a faculty possessed only by persons of a certain constitution; that a Dreamer had told you how, when he was asleep, he saw and conversed with the dead, beheld distant places, lived another life, walked upon water, flew through the air, performed impossibilities, felt passions and sentiments and exercised intellectual powers far exceeding those of his waking life, should we not say of him that he was a madman or an impostor? Would he not be prosecuted by the high priests of

physical science as a rogue and vagabond, and sent to prison by the Scientists or to an asylum by the Doctors?

But because all of us do these things nightly the wonder of them does not strike us. We do not pause to think how great the marvel is, nor how it comes *to be*. May I venture to hope that the reader will be induced to look upon this marvellous mental phenomenon with some curiosity and hereafter to recognise in the phenomena of dream, not only something to awaken curiosity, but something to command his serious attention, as being peculiarly fitted to reveal to the inquirer some of the mysteries of Mind, its structure, its faculties, the manner of its action. The phenomena of Dream open to us the path by which we may hope to make the first advances into the science of Psychology, for they are *facts* known to all, disputed by none and which even the Materialists cannot deny. Happily, neither their vocabulary of abuse, nor their weapons of prosecution and persecution, can be directed against those who investigate the phenomena of dream. Their existence cannot be denied, nor can they be explained by attributing them to imposture.

How comes this transformation from sanity to insanity, wrought in a moment, when Sleep has closed upon the Mind the portals of the senses and left it almost isolated from the real material external world to revel in its own imaginary world?

Some rein that held the mind in check when awake has certainly been taken from it at the instant sleep occurs.

What is that lost rein—that paralyzed power?

It is not *Consciousness.* We do not lose our individuality in dream. Never does the dreamer suppose himself to be another person. He may dream that he has assumed other characters, that he is a king, or a beggar, but still it is *himself* who has become a king and is *acting* king.

Nor is *the Will* absent. The dreaming mind is conscious of the exercise of its Will and believes that its commands are obeyed. But the Will is powerless to compel action. Its commands are *not* obeyed. In dream we *will* to speak, to run, to do what the body does freely when in our waking state we *will* to do. We *will* in dream as we *will* when awake, but the mechanism of the nerves that move the body refuses to obey the mandate of the Will however strenuously exerted.

Imagination, on the other hand, is even more lively in dream than in our waking time.

The *Reasoning Faculties* are not asleep, for we *argue,* often rightly—only we reason upon wrong premisses. We accept the visions of the mind—the ideas presented to the Conscious Self — as being real and then we reason upon them rationally. What Lawyer has not often dreamed that he was addressing a logical legal argument to an approving Court and, when wakened, remembering

and reviewing that argument, has found it to be without a flaw?

The *Emotions* are not extinguished when we dream. The presentation of imaginary incidents which, if they had been real, would have kindled the passions in waking life, rouse those self-same passions to equal if not to greater fury in dream. Nor is the *passion* fanciful. We do not merely dream that we are angry. Very real and hot anger is kindled by the fancy-born picture of the dream, as the reader will readily discover if he recalls the sensation that attends upon being awakened at the moment of irritation in a dream. It is with all the other passions and emotions as with anger. The incidents of a dream excite them as if those incidents were true. Wherefore? Because they appear to the mind to be true.

Thus by a process of exhaustion we may hope to arrive at some knowledge of the cause of the special characteristic of dream—that is to say, the *absolute belief we have in its reality during its enactment.* The inquiry cannot fail to throw a great light upon mental structure and upon the relationship of the mind to the body and to the external world.

The first fact we learn from observing the action of the mind, when thus severed from communication with the external world, is its perfect independence, its entire unconsciousness of its loss, its capacity to create a world for itself and live a

life of its own. If such a condition could be imagined as a mind continuing to live in a dead body, we might find in this phenomenon of sleep how the mind could exist in the same state of activity as now, feel the same emotions of pleasure and of pain, and enjoy a life as real to itself, although imaginary in fact, as is the actual existence of any living man.

But it teaches a lesson yet more important. If the mind can thus live a life of its own when severed from the influences of the body by the paralysis of a section of the brain in sleep, is not the presumption strong that this *something* that does not sleep with the body, that preserves an individual consciousness, that has memory and a Will, can create a world of its own and live and act in it with entire belief in its reality and which has a perfect sense of pleasure and of pain, is not the material brain merely, but something other than brain and of which the brain hemispheres are only the material mechanism? If the Conscious Self lives and works thus when the body is dead to it in sleep, may it not well be—(nay, does it not suggest even a probability?)—that when permanent severance by death is substituted for the temporary severance by sleep, the same Conscious Self may continue to exist with other perceptive and receptive powers adapted to its changed conditions of being?

Why, then, are we in dream so credulous as

to believe implicitly that whatever visions are presented to us by the busy fancy are realities? Why do we accept impossibilities and incongruities without a question of their truth and scarcely with a sense of surprise or wonder? We have seen that it is *not* because the *reasoning* faculties are asleep, —for often they are very active in dream.

Simply, it is because we accept as real and as having been sense-conveyed, and therefore as representing external objects, the ideas that are in fact created by the mind itself.

And wherefore do we thus accept them?

The answer throws a flood of light upon the Mechanism of Mind and the Mechanism of Man.

All our sensations are mental. Whether self-created within or brought from without by the senses, we are conscious only of the *mental* impression. That alone is *real* to us. That alone *exists* for us.

But by what faculty do we, in the waking state, distinguish between the self-created and the sense-borne ideas and impressions, so as to recognise the former as ideal and the latter as real?

For instance; you think of an absent friend, and you have in your mind a picture of him more or less accurate. You see your friend in person and then another picture of him is in your mind, brought to it by the sense of sight. Your perceptions of both are merely mental pictures. But, nevertheless, you readily distinguish them

and call the mind-drawn image *ideal* and the sense-brought image *real* — meaning by these phrases that the former has no objective existence, but the latter is actually existing without you.

By what process is this result obtained? What enables you so to distinguish them?

It can only be that you are *conscious* of the action of the *senses*. You feel that your eye is employed in the process. You have learned by *experience* that the actual presence of an external object is only to be accepted when the information of it is brought to you by one of your senses.

Thus it is that, when we are awake, the senses correct the action of the mind and our capacity to distinguish the real from the ideal is due to the information given by the senses.

It is plain now why in dream we believe the ideal to be real. The *senses* being severed from the Mind by sleep, the Mind has lost the instrument by which it learns, when awake, what is shadow and what substance. As the necessary consequence, all ideas appear to it to be real because they are all alike. Inasmuch, then, as all the pictures that throng the mind were originally brought to it by the senses, it has no means, when an idea comes before it, of discerning whether it is a newly brought idea or only the revival of an idea already existing in itself. Hence it is that the Mind cannot but accept all its self-

creations as realities and when these are combined in a connected drama, the whole is viewed by the Conscious Self as an actual adventure of the body, and not, as in the waking time it would have been viewed, as merely a creation of the busy fancy.

But the conclusion from this is that there is a Conscious Self, distinct from the brain action which it contemplates and criticises.

That in fact we *have* Souls.

Or rather that we *are* Souls, clothed with a molecular mechanism necessary for communication with the molecular part of creation, in which the present stage of being is to be passed.

CHAPTER VIII.

THE PHENOMENA OF DREAM.

SUCH being the *Physiology and Psychology of Dream*—that is to say, the conditions of the bodily and mental mechanism under which the phenomena of Dream are presented—let us observe those phenomena and from the facts noted endeavour to learn what light is thrown by them upon Psychology. A mental state so strange and abnormal cannot fail to assist in the solution of that great problem of the Mechanism of Man which it is the vocation of Psychology to solve. Is that Mechanism moved or directed by any but a self-generated force? Is it compounded of any but the tangible material structure? Does Soul exist and, if it exists, what is its relationship to the body?

A Dream is not a confused crowd of disconnected ideas. It is a succession of associated incidents more or less orderly, even when incongruous, improbable or even impossible. The mind of the sleeper constructs a drama, often having many parts played by many persons; but always himself is one of the actors. As *suggestion* is the process by

which the mind works in waking life—one idea suggesting another with which it had been at some past time associated and then another linked with that, and so forth—so does the unsleeping mind of the sleeper present to the Conscious Self a succession of suggested pictures which other mental faculties weave into a story that is enacted before himself with all its scenery and machinery! And this drama is not performed in dumb show or in pantomine merely, but it is a drama spoken as well as acted by the players, men, women, or animal, who appear to the dreamer to play before him and with him their several parts as perfectly as they would have been enacted in actual life.

Hence we learn that in dream, as in the waking state, the mind acts in obedience to the laws of mind. The various mental functions are not exercised vaguely, but in more or less of orderly relationship to one another. Thus, imagination presents pictures which are accepted as having been brought from without by the senses and therefore to the sleeper are as real as if they had been objects of sight. These ideal pictures, thus received as real, according to their various characteristics excite precisely the same emotions as they would have excited had they been real. But although the picture is imaginary, the emotion is actual. We do not merely dream that we are angry or fearful; we feel actual anger and real fear. The reader may remember that often the

emotion excited by the dream has continued to be felt after waking and when the dream itself has vanished. Indeed we know not how much the mental character of the day is influenced by the passions and emotions that have been stimulated by the dreams of the night, the mental excitement continuing after the cause of it has vanished and is forgotten.

The most wonderful of the many wonders that attend the condition of dream is the development of the *inventive* faculty so far beyond its capacity in the waking state. Reflect for a moment what this performance is. Every dreamer, however ignorant, however stupid, however young, performs a feat which few could accomplish in the waking state, when in full command of all their mental faculties. Every dream is a story. Most dreams are dramas, having not a story merely, but often many actors, whose characters are as various as on the stage of real life.

What does the dreaming mind?

Not merely does it invent the ideal story; it invents also all the characters that play parts in it! Nor this only. It places in the mouth of each of those characters speech appropriate to the character of each! Yet are all of these dialogues invented by the mind of the sleeper! In a restless night many such dream-dramas, each having its own distinct plot and actors, will be invented by the dreamer, and a dialogue will be constructed by himself in

which each of the actors will play his proper part. Strange as the assertion may appear, it is *a fact* which a moment's reflection will confirm, that the ignorant ploughboy in his dreams has made more stories and invented vastly more characters to enact them and constructed more appropriate dialogues for those characters than the most copious dramatist or novelist—aye, more than Shakespeare himself!

Another suggestive feature of the phenomena of dream is the *marvellous speed* of the mental action. Working untrammelled by the slow motions of the body, the dreaming mind sets at defiance all the waking conceptions of time. A dream of a series of adventures which would extend over many days is, by the mind in dream, enacted in a few minutes; yet it is all performed—all perfect—all minutely perceived, said and done; proving that, when the mind is untrammelled by the body, it has other very different conceptions of time. May it not be that time, as counted by our waking thoughts, is in truth the ideal time, and that mental time as measured in dream is the real time?

Not long ago I was enabled to apply some measure to this remarkable difference between the action of the mind independently of the body and its action when conducted through the slow moving mechanism of the body. Called at the usual hour in the morning, I looked at my watch and in about two minutes fell asleep again. I dreamed a dream of a series of events that in their performance

occupied what the mind conceived to be a whole day—events in which I was an actor and played a part that would have occupied a day in actual doing. Waking suddenly with the influence of the dream upon me and the memory of it full before me, I looked at my watch again, thinking that I must have been sleeping for an hour and had lost the train. I found that, in fact, I had been asleep but four minutes. In four minutes my mind had passed through the history of a day, had invented that history, and contemplated it as a whole day's action, although it was in fact a day's work done by the mind in four minutes. This may give us some conception of what is the capacity of the Soul for perception and action when, if ever, there is a falling away from it of the cumbrous bodily material mechanism through which alone, in its present stage of evolution, it is adapted to communicate with the external material world.

Another phenomenon of Dream is *exaltation of the mental faculties* generally. Often there is an extraordinary development of special faculties in special dreams. A proof of this is found in the fact, already noted, that dream itself is an invention of the mind whose then capacities far exceed anything of which it is capable when the body is awake and imposing upon it the conditions of its own slow, because material—that is molecular—action. Not only do we *invent* the dream, but we *act it* in thought. Not merely do we act in it

ourselves, but we paint the scenery, construct the dresses and decorations, invent the characters, and put into their mouths the language that would properly be theirs had they been beings of flesh and blood instead of shadows summoned by the fancy. Almost every faculty of the mind must be exercised upon such a work. Even the waking mental condition will not enable us to do this. If you doubt, try it. Set yourself to invent a dream and describe it on paper, making each one of the personages with whom you have peopled it talk in his proper character. Unless you are a skilful and practised dramatist you will find yourself wholly at fault. Remember that what you in the full possession of your intellect have failed to do, the most ignorant and stupid do every night and you will begin to measure this marvel of the exaltation of the mental powers that attends upon the condition of dream. If you indulge in the pleasant but dangerous practice of reading in bed, have you not often, on closing the book, extinguishing the candle, and turning to sleep, continued in a state of dream to read on, believing that you were still reading the book. But what was the fact? Your mind was then composing all you dreamed that you were reading. It was inventing a continuation of the argument or narrative, or whatever you may have been perusing when sleep stole upon you and you lapsed into dream. Have you never

dreamed that you were preaching a sermon, or reading aloud, or composing music, or singing a song? Probably, in your waking state, you could do neither. In dream, your mind does it all without a conscious effort. Nor is it, as some have suggested, merely a fancy that the mind is so acting and not a positive action of the mind. If wakened while so dreaming, the argument, the speech, the song, will recur to the waking consciousness and become a positive memory capable of being subsequently recalled. Sometimes the dream vanishes after an interval and cannot be recollected by any effort of the Will, although it may recur in dream long years afterwards. In this manner COLERIDGE composed that beautiful fragment of a poem, "Kublai Khan." His mind had wrought the whole in a dream. Suddenly waking with a vivid impression of that dream, he grasped a pen and began to write the remembered rhymes of what had been a long poem, although composed in dream with the speed at which the mind works when untrammelled by the conditions of its material mechanism. He seized pen and paper and had set down the beautiful lines that have been preserved when he was interrupted by some matter of business. On his return to resume the work, the dream had vanished and the world to its great loss has received nothing but the exquisite fragment we read now.

This mental exaltation so frequent in dream is

recognised in some familiar practices, the reason for which is, perhaps, not known to those who resort to them. In our schooldays, a lesson was best learned by reading it when going to bed. It was then easily remembered in the morning. The advice so often given, when a matter of moment is presented, to "Sleep upon it," is a recognition of this higher mental action in sleep. The Mind seems in sleep unconsciously to work upon the idea presented to it, and we wake with clearer conceptions and larger views of the *pros* and *cons*. I have known cases in which a doubting mind has thus been "made up" without conscious perception of the convincing argument.

Although in dream the mind works with such wonderful rapidity that the events of a day may be enacted in a few minutes, it has not quite lost its consciousness of the measure of external time. A desire to wake at a particular hour will often be followed by an actual awakening at that hour. Continued mental consciousness of the desire is unintelligible. But in what manner does the mind count the flight of a time whose measure is so different from its own conceptions of time?

Say, that you want to wake at six o'clock. You fall asleep with this impression upon the mind; but you fall also into the condition of dream and in that condition your mind is engaged in inventing adventures that are the business of a long day. Nevertheless, it preserves the consciousness of the

time as it is in the external world and you wake at the desired hour. I can suggest no other solution of this than that the brain that dreams, and the Conscious Self that perceives the dream, are two entities, and that it is the Conscious Self or Soul that notes the flight of time in the external world, while the dreaming brain is revelling in its own conception of time as measured by the flow of its own ideas, and not in hours measured by the motions of the earth and moon. Another solution suggests itself. May not the duality of the mind, the action of the double brain, which explains so many other mental phenomena, account for this also?

But these phenomena of dream are proofs that to the mind "time" is more ideal than real; that the measure of it may differ in individuals and still more in races. May it not be that thus lives are equalised and that to the ephemera its one day of life may appear to be as long as our lives appear to us? A life is practically as long or short as it *appears* to the mind to be.

Dreams are rarely, if ever, without foundation; that is to say, they are the product of some *suggestion*, although it may be difficult to trace them to their sources. Very slight suggestions suffice to set the mind in motion, as is proved by a multitude of recorded cases which the memory of every reader will present to him. The senses are not wholly paralysed in ordinary sleep. They carry

to the mind impressions of various degrees of power and act with more or less of force according to the condition of the recipient ganglion. Sounds are heard and suggest dreams. But the loudest sounds are not always perceived most readily. The unaccustomed sound most startles the consciousness. Often a whisper will waken when the roar of cannon makes no impression upon the sleeper. A dweller in a noisy street sleeps soundly amid the roar of carts and carriages and is wakeful in the country by reason of the silence. Habit governs this as so many others of our sense impressions. We learn *not* to hear. Hence the influence of trifling impressions upon the sleeping senses when powerful ones fail to reach us. Very slight impressions suffice to suggest the subjects of dreams. The mind having taken the direction given by that impulse forthwith employs its inventive faculties in the construction of a story based upon the faint lines of that suggested subject.

Even when awake we are ignorant what impulses set up trains of thought. We know not why this or that idea "comes into the head." The suggesting cause is often so slight as to be imperceptible. The brain is an organ of inconceivable sensitiveness. Its fibres are so delicate that millions are packed into the circumference of a sixpence. Yet has each fibre its own function and each is a musical chord competent to catch and to vibrate to motions

of the ether which the senses cannot perceive. It is probable (not proved) that in sleep, when not distracted by the claims of the nerve system and the thronging impressions brought by the senses, these brain fibres are vastly more sensitive and moved by still slighter action of the ether than in waking life.

In Dream we never lose the consciousness of our own identity. We retain our individuality. You dream often that you are *something* other than you are, but never that you are some other *person.* Does not this indicate the existence of an entity, other than the dreaming brain, which preserves its oneness and its sanity while the material organ with which it is associated and through which it communicates with the external world is, as it were, forgetting its reason, its experience and itself, and so becoming in very truth insane.

And here we touch upon the most perplexing characteristic of dream. We are conscious of existence, of individuality, and, in a slight degree, of sense impressions. We have ideas, reflections, emotions, sentiments, passions. We can invent stories, construct characters, endow them with dramatic language, paint ideal pictures, make speeches, compose music and conduct a train of argument. But withal we are not rational. We can *think* wise things, but we *are* the veriest fools of nature. Every mental faculty is awake and alive—save one—namely, the faculty, what-

ever it be, that enables us to distinguish between fancy and fact, between the possible and the impossible, the congruous and the incongruous; the faculty, in brief, which separates sanity from insanity.

In dream, with rare exceptions, we are not conscious that we are dreaming. Fancies are accepted as facts, shadows as substances, the ideal as the real. And they are so accepted without suspicion or doubt. We *see* them, *hear* them, *feel* them. Nothing in our actual waking life is more real to us than are the unrealities of dream at the moment of dreaming. Probably there are few readers who have not occasionally dreamed that they were dreaming, and while noting the drama have said to themselves "this is a dream." But these are rare exceptions to the rule that a dream is accepted by the sleeping mind as an event of actual occurrence and the scenes and persons implicitly believed to be objective and not subjective; that is to say—as being then actually existing in the external world.

So believing, what are the materials to which this implicit credence is given? Here we arrive at the most perplexing of the problems presented by the phenomena of dream.

We accept without hesitation, or questioning, or even a suspicion of its unreality, that which in waking life would have been banished instantly as the baseless fabric of a vision. We believe im-

plicitly in objects and actions which, when awake, we should have pronounced to be impossible. Moreover we contemplate the wildest conceptions of the fancy without the slightest consciousness of their incongruity or folly. Nothing is too impossible or unreal for acceptance by the dreamer as facts that cause him neither surprise at their presence nor wonder how they come to be.

What is the change in the mental condition that has wrought this mental revolution—not slowly and by degrees, but wholly and in a moment? At this instant, the mind is competent to discern the ideal from the real, the shadow from the substance, the practical from the impossible. In the next moment it can distinguish neither—all appears to itself to be equally possible, probable, real. Starting from sleep, the normal state is recovered, but not so speedily as it is lost. The dream itself sometimes continues after the senses are restored. The memory of it remains longer and its unconscious influence longer still. Passions and emotions which the dream has kindled do not subside at once and often the agitation continues to disturb the mind long after the cause of it has vanished from the memory.

Two answers present themselves.

1. This marvellous character of dream may be consequent upon the severance of the mind from its communication with the external world by reason of the partial paralysis of the senses.

2. Some one or more of the mental faculties may be sleeping while others are awake and active.

The first is the solution commonly accepted. It is contended that the senses correct the vagaries of the mind; that we are enabled to distinguish between the creations of the mind and the impressions brought to it from the external world solely by the consciousness we have, when we are awake, of the action of the senses and the knowledge we have that the impressions borne to us by the senses are objective—that is, made by something existing without ourselves. If, for instance, you close your eyes and give rein to the imagination, a stream of ideas—pictures of persons and places—flows before the mind's eye. You do not mistake these for realities. You are conscious that they are born of your own brain. Had you been asleep and dreaming, instead of being awake and using your senses, you would not have discovered that these mental pictures were subjective only; you would have accepted them implicitly as objective impressions brought to you by your senses.

This, however, explains but a portion of the phenomenon. Even if it be a true solution, it accounts only for the acceptance in dream of the ideal as real. It leaves wholly unexplained the more remarkable feature exhibited in the entire unconsciousness by the dreamer of the absurdities and impossibilities presented in the dream and the

absence of surprise and wonder how such things can be. In the waking state, the mind would therefore reject them instantly as the illusions they are. Hence the reasonable conclusion that, in addition to the sleep of the senses and of the *will*, some part of the material mechanism of the mind is also sleeping or its activity is suspended during dream.

The investigation is of serious moment, for it raises some other questions of even greater importance. If the explanation be sufficient, it determines some moot points in Mental Physiology. It proves that the mental machine, the brain, is *not* one and indivisible—that the *whole* brain is not employed in each mental act, as contended by Dr. CARPENTER.

To what mental faculties are we indebted for our waking consciousness of incongruity, impracticability, absurdity, irrationality? Obviously these faculties must be slumbering in dream. To *their* temporary paralysis this most remarkable phenomenon of dream is certainly due.

The popular notion is that *reason* is the slumbering faculty. We talk of reason as being the special attribute of Man. In fact there is no such faculty. There is a mental process we call reasoning; but it is performed by the joint action of various mental faculties. One presents the things to be reasoned upon; another compares them and presents their resemblances and dif-

ferences; a third enables us, by the process we call *reasoning*, to apply these resemblances and differences to some third subject and thus from the known to predicate the unknown.

It is familiar to every reader that this process of reasoning is not always suspended in dream. On the contrary, it is sometimes abnormally active. We reason rightly often, but on wrong premisses. What we are unable to discover in dream is the unreality of the subject matter upon which we are reasoning.

If, for instance, you dream that you are making a speech or preaching a sermon. In your dream you pursue a logical argument, but you found it upon imagined facts that are untrue and improbable, which the waking mind would not entertain for a moment, but which in your dream you accept as true and implicitly believe to be real.

We shall, perhaps, arrive at the solution of this problem by the process of exhaustion.

The faculty of imagination, that shapes to the dream ideal pictures of things, is not sleeping. The faculties that perform the process of reasoning are not sleeping. *Comparison*—the power to compare the ideal with the real—alone is wanting. We mistake the shadows of the mind for substances. We accept the brain-born visions as realities. Why? Because we are unable to compare them. In brief, Comparison is the faculty, paralysed

in sleep, whose absence causes the credulity of dream.

Of this fact there can be no doubt. But a very formidable difficulty here presents itself. How and why is it that this faculty alone is found to slumber when the greater part of the mental mechanism is awake and active?

It has been one of the most perplexing problems of Psychology. A solution of it has occurred to me which I submit to the consideration of the reader, but as a suggestion merely. It is too novel to be offered as anything more than a suggestion.

Each mental faculty can perform only one act at the same instant of time. It is one of the conditions of existence here that all consciousness shall be in succession. Hence indeed our conception of time. If any other being could obtain many perceptions simultaneously, and not in succession, to that being there would be no *time*, in our sense of the term. But the process of comparison involves the contemplation together of the two things (or ideas of things) to be compared. This difficulty is removed by the double brain. Each brain presents one of the ideas to be compared and upon these the faculty of comparison employs itself, discerning their resemblances and differences. If so it be, the cause of our incapacity to discover the absurdities of dream is the partial paralysis (or sleep) of one of the two mental faculties that present the ideas of objects and the consequent in-

capacity of the faculty of comparison to discharge its proper function of informing us what of our mental impressions are real and what illusory.

And this raises a curious question as to the relative functions and operations of the two brains. In profound slumber, when both brains are sleeping, there is no consciousness—time is annihilated to such a sleeper and awakening seems to follow immediately upon falling asleep, although in reality many hours may have passed. When the brain is sleeping but partially there is some consciousness of time in sleep and of the lapse of time upon awaking. Is such partial sleep the slumber of *one brain only*, and are these phenomena of dream due to the action of that one brain deprived of the correcting influence of the other brain? Does the faculty of comparison fail to show us that our mental impressions are subjective and not objective because it is not assisted by the normal action of the duplicate faculty of the other brain? Comparison is the foundation of the process of reasoning. It has been noticed that persons suffering from hemiplegia—that is, from disease of one brain only—often lose the power to compare and consequently the capacity for reasoning readily and correctly. May it not be that a similar condition is produced by temporary paralysis of the brain in sleep? As already stated, the power to reason is not absent in dream. We often reason elaborately and well, taking the ideal pictures as real incidents.

We accept as objective facts what are merely mental impressions and thus build an argument on an incorrect assumption. The reasoning is right, but the basis of it is false. Question each mental faculty in turn and it will appear that but one is at fault in dream—namely, *comparison*. We are unable to discern the difference between the mental and the sensual impression—the self-created and the sense-borne idea—because we are incompetent to compare them and it is by comparison alone that we can distinguish the false from the true. I throw out this, as a suggestion merely, to Mental Philosophers and Psychologists.

Indeed, the fact that we have two perfect brains with every mental faculty in duplicate (as contended by Sir HENRY HOLLAND and now conclusively established by the experiments of BROWN-SEQUARD and Professor FERRIER), has opened a new field to the Mental Philosopher and Psychologist. It must have the most intimate relationship, not to the phenomena of Sleep and Dream alone but to all the phenomena of Mind. In this great fact will doubtless be found the obvious solution of many problems hitherto insoluble. Foremost among those philosophical puzzles has been the instantaneous lapse of the Mind into *insanity* in dream, and the no less marvellous manner in which upon waking we pass almost as quickly out of that insane condition into sanity.

These are the principal phenomena of Dream and the study of them cannot fail to throw a flood of light upon mental physiology and psychology. In them we are enabled to view the operations of the mind and the relationship of soul and body under conditions that reveal to us parts of the mechanism of man that are wholly concealed from us in the normal state of that relationship. The strange neglect of such an obvious means of knowledge is doubtless due to the fundamental error that has excluded Mind and Soul from the category of physical sciences and consigned them to the hopeless region of metaphysics, persisting in their pursuit by abstractions, argument and conjecture, and refusing to them investigation by *facts*, as the other sciences are now investigated. If the phenomena of dream were strange and rare as are those of somnambulism, they would as much excite our curiosity and strike us with amazement. But they are not wondered at only because they are so familiar. If dream, instead of being common to us all, were developed only in a few, the persons subject to it would certainly be denounced as impostors and prosecuted as rogues and vagabonds by the High Priests of Science. But the very facility for examination of the mental condition of dream should induce those who really desire to promote the most important of all knowledge—the knowledge of ourselves, our constitution, our mechanism,

and our destiny — to seek where we may most reasonably expect to find it—in the condition in which the Mind is every night practically severed from its connection with the body and works by its own impulses, without the aid or incumbrance of the senses, and without the directing power of the intelligence and its *Will.*

CHAPTER IX.

THE PSYCHOLOGY OF DREAM.

DREAM is essentially a psychological condition and therefore an important study for the Psychologist, for in dream we learn, not only what is the mechanism of the Mind, but also much of the manner in which its operations are performed. Dream teaches us what recent physiologists have by their experiments confirmed—that the mind is not structured as one homogeneous entity, the whole of which is employed in every mental act; but that it is a machine composed of parts, each of which has its own special function, exhibited in the various expressions which we call ideas, sentiments and emotions.

For convenience we have given to the entity, of which these various faculties are parts, the collective name of "Mind." But it may well be questioned if such an entity exists. Certainly we cannot find it, whether we observe the action of our own minds or that of others. All that we can discover by help of our senses and by reasoning upon their information is the existence of a won-

derful piece of Mechanism—the brain—by which the functions of Mind are performed and whose structure regulates the entire character of the Mind.

It is conclusively established that the individual Self, in its normal state of relationship to the body, can receive and convey impressions only through the medium of the brain. Remove the brain and *mind* ceases to be, although life may linger long. Extract a part of the brain and a part of "the mind" goes with it. This result is sometimes obscured by the fact, not sufficiently recognised by the Physician and the Mental Philosopher, that we have *two* brains—two organs of Mind—one of which can act alone when the other is wholly or partially disabled. If a Dream be analysed, it is not difficult to trace the action of each separate faculty. The imagination supplies the picture, which we mistake for a reality because we have lost the means by which, when awake, we distinguish the mere mental creation from the impressions borne to us by the senses. Hence mental action precisely as if the ideal picture had been real as it is believed to be. The other mental faculties are called into play by the drama of the dream as they would have been by a living drama. It is not an imagined anger, or fear, or hate, that we feel in dream. The passions, emotions and sentiments are actually excited as they would be by the same objects presented when

we are awake, only they are kindled by shadows created within and not by substances existing without.

But Psychology will gather from the phenomena of dream some very important conclusions. In dream the Mind is awake and at work, but it works wildly, insanely, without self-control. Something is absent in sleep that controls its action when we are awake. That absent controlling and directing force is the WILL.

What is THE WILL?

The WILL is the expression of the SELF—of the INDIVIDUAL BEING. It is the "I"—the YOU—that commands, controls and directs thought and action.

This Conscious Self, which possesses the power we call the *Will*, is not, and cannot be, the material brain, nor the product of the brain, as the Materialists assert; for we see that in Dream the brain is in part awake and working without the assistance or control of the Will; proving that the Self, of whom the Will is the expression, is not identical with the brain.

Moreover, the Conscious Self, although taking cognizance of the action of the mind in dream, is nevertheless unable to direct its action; thus affording another proof that the Conscious Self and the material mechanism are not identical.

The phenomena of Dream, then, are the *facts*

first presented in the scientific investigation of Psychology from which we derive physical *proofs* of the existence of a *Soul in Man*, not as a vague theory merely, but as shown by the positive *evidence* of his mechanism in action.

CHAPTER X.

FALLACIES OF DREAM.

Always and everywhere Superstition has dallied with Dream. The notion that dreams are sometimes prophetic is still so widely diffused and so often made the theme for gossip and material for fiction that there are few, even among the educated, who can wholly divest themselves of the influence of a startling dream.

Neither evidence nor argument has been adduced to support this claim of the sleeping mind to prophetic power. There are no natural means by which *new* impressions can be conveyed to the mind in sleep, and we have already seen that in this condition the mind is less, not more, capable of reasoning out the probabilities of the future.

It will be said, perhaps, that prophecy is not an act of reason but a gift of inspiration; that the prophet only speaks—his are not the thoughts uttered. But in what manner is this gift made more easy by sleep? It *should* be more active in the waking state. The prophetic dream is either a creation of

the sleeping mind or it is brought into the sleeping mind by a miracle. It is highly improbable that the mind should have superior wisdom when in its most imperfect condition. It is still more improbable that a miracle should be wrought for such a purpose. Moreover, the information alleged to be imparted thus is always of something *to come*, while there is no instance of a revelation of things that have been done in the past and therefore capable of being tested. A gift to tell what *has been* would surely be more easy than a gift to tell what is *to be*. It is strange and suspicious that none are seers of *the past*.

The widespread notion of prophetic dream is probably based upon a belief, almost as widely diffused, that in sleep the Soul can and does sometimes pass out of the body and obtain information by direct impressions received through its own vastly extended power of perception. It is not uncommon to hear an assertion, when a place is seen for the first time, that there is a memory of the same place having been seen before, and there are some curious reports of cases of this kind that deserve to be investigated. But many of these apparent marvels may be accounted for by coincidence or by memories of which the link has been lost. When the multiplicity of dreams that occur in a lifetime are taken into account, occasional resemblances of external objects or events to some portions of former dreams are

by no means improbable. The same explanation applies to many dreams that are supposed to have been prophetic because something afterwards occurs having some resemblance to the dream. Memory also has a large share in these recognitions. Memory may exist without recollection. Thousands of things are stored away in the memory which we cannot recal even if we try to do so, but which come back to us suddenly, at unexpected times, for no cause that we can trace although certainly suggested by something associated with the revived idea. Thus the eye may well recognise a strange place as having been seen when, in fact, the memory has unconsciously received some picture of it or of some place very like it, the existence of which had been forgotten, but which is now revived by the suggestion of the place itself.

Somnambulism, although commonly supposed to be a phase of sleep, has really no relationship to it. Its physiological and psychical conditions are entirely different. There is the aspect of sleep, but nothing more. The somnambule is not sleeping, for he performs often the work of his waking life although with certainly closed eyes and probably sealed up senses. The somnambule has no memory of the doings of either mind or body during his trance existence. The sleeper is conscious at the time of dreaming and remembers his dream. As there is Somnambulism without sleep, so there may

be Somnambulism in sleep, and indeed, with a constitutional tendency to it, the state of sleep is so favourable to the inducement of the condition of Somnambulism that the one may well lapse into the other.

Nor is "sleep walking" the only exhibition of Somnambulism; it is but one stage of it. Somnambulism often occurs without action of any limb, for it is a mental and not a muscular condition. But, inasmuch as the uninformed spectator notes only the instances of "sleep walking," the much more numerous cases of somnambulism occurring with the patient at rest are unnoticed.

To this cause, then, may many of the reported phenomena of dream be assigned. It would be beyond the scope of this monograph to treat at any length of the manifold phenomena of Somnambulism, but some of them will certainly explain cases of dream apparently not to be accounted for, as all facts and phenomena may be, if rightly investigated, by reference to natural causes, without invoking the assistance of the supernatural. Somnambulism proves the presence of two abnormal mental conditions, namely, supersensuous perception and mental sympathy. The former is the name given to a faculty the mind has, under certain conditions, of perception beyond the range of the senses (whatever the *modus operandi* may be). The other refers to a special form of sympathy of thoughts and emotions of one sensitive mind

with other minds having a certain relationship with it.

Many of the authentic cases of cognizance of the distant in dream may be thus accounted for. The sleeper has lapsed into somnambulism, is then, in fact, a somnambulist and not a dreamer. Possessing the abnormal development of the perceptive sense which is so familiar a fact in natural somnambulism, the mind has perceptions beyond the range of the senses and is susceptible of sympathies with other minds which the bodily senses cannot convey.

That such mental conditions exist is proved conclusively by the numberless cases of natural somnambulism recorded in the medical journals of all countries and which are indeed familiar to every reader because of their frequent occurrence in common life.

Dream is not merely a reproduction in new combinations of impressions made upon the mind unconsciously as well as consciously, forgotten as well as remembered. The fact must also be taken into account that in dream mental action is vastly increased and the flow of ideas so accelerated that if life be measured, as it should be, by the number of ideas that are presented by the mind, the life of dream is vastly longer than waking life. If the ideas that would occupy many waking hours are compressed into a sleep of one hour, the whole dream-life must have presented to the mind in-

finitely more ideas than the whole waking life. The wonder would be if, of this vast multitude, many were not found to be coincident with events of actual occurrence afterwards. A further explanation of dreams that appear to convey information from some external intelligence, or to be prophetic, will be found in this—that many things impress themselves upon the mind when we are not giving attention to them and, therefore, unconsciously to ourselves. We thus lose some of the links of association which, if they had been perceived, would have shown us the connection between the dream and the incidents to which the dream related and which, if we had known, would have stripped the coincidence of its marvellousness. Yet a further explanation will be found in the exaltation of the mental faculties in dream, which enables us often to perceive, more clearly than in our waking state, ideas and chains of ideas and to think about them more correctly than is practicable in waking life, when the influx of external impressions represses to some extent the independent action of the mental faculties.

There is a popular belief that in sleep the Soul sometimes quits the body and personally visits the scenes and persons of the dream which, in truth, is not all a dream. This is nothing more than a poetical fancy. There is no evidence of such journeying. The proof of it would be if the dreamer could tell us of actual occurrences passing else-

where at the moment of his dream. There is, indeed, abundant evidence of mental communion in sleep, suggesting a dream that has relation to that distant person; but there is no satisfactory evidence of a positive perception of an event then passing far off. It is remarkable, indeed, that dreams to which this solution has been applied usually refer to something that is *to be*, or that *has been*, and not to events actually happening at the moment and which alone could be positively conclusively proved by reference to the persons whose sayings and doings are seen, heard and reported. The same remark applies to this as to prophecies generally. Why do they not tell us of something that *is doing* far away, or something that *has been done* in the distant past and therefore capable of verification? Surely the power that could prophesy the future, the dreaming that foreshadows what *is to be*, could, with vastly more ease, tell us what has been done or what is being done elsewhere at the moment of its exercise! Why is so simple a test invariably avoided?

Sympathetic dreams admit of another explanation. Two persons dream the same dream at the same time. They may be in the same room, in the same house, or far apart. The two dreams are not always identical in their details, but the main incident is substantially the same in both. The instances of this are too many to be accidental coincidences. The explanation is to be found

in that *mental sympathy* the existence of which cannot be doubted by any person who investigates psychological phenomena. The limit to which that sympathy extends is not yet measured. We know only that it is not bounded by the narrow range of the senses. Perhaps it is a purely *psychic* faculty. If it be, we know as yet so little of the nature and powers of the Soul that it would be vain to speculate in what manner the operation is performed. But of this we may be assured, that, whatever the capacity of the Soul when we are waking and the external world is, as it were, pressing in upon us at all sides and occupying the whole mind, those powers are vastly extended when the material mechanism is at rest and the sleepless Soul alone is busy. If there be, under any conditions, communication between minds without the intervention of the senses, we may reasonably conclude that these would be greatly facilitated in the time of sleep, when the Soul is less subjected to the restraints of that mechanism by means of which it communicates with the *material*—that is to say, the *molecular*—world in which the present stage of its evolution is to be passed.

The proofs are many that dreams may be suggested by the influence of other minds in unconscious communication with the sleeper. If the finger be placed upon the head where, according to the phrenologists, is the seat of the mental

faculty of mirth, a smile will be seen soon to steal upon the sleeping face. Touch in like manner the asserted seats of combativeness or destructiveness, the features assume an aspect of excitement which will be removed by touching the asserted seat of benevolence. The explanation of this phenomenon is that the brain thus excited to action suggests or moulds a dream in accordance with the emotion thus denoted. This fact has been advanced by the phrenologists as proof that they have rightly mapped out the brain. But such is not the necessary conclusion from the fact. It may well be that it is the *mind*, and not the finger, of the waking operator that directs the mental action of the unconscious sleeper. The waking *Will* possibly controls the sleeping Will. We know that it does so in Somnambulism and it is probable that it does the like in ordinary sleep.

But, explain it as we may, the fact remains.

Direct suggestion of dream by external causes is less disputable. So sensitive is the mind in sleep, when relieved from the thronging impressions of the senses, that impressions so slight as to be wholly unnoticed in our waking state are doubtless perceptible and operate as suggestions when we are asleep. A slight touch or sound often serves to change the entire character and direction of a dream, the mere sound giving rise to the train of new ideas thus suggested, because it is uncontrolled by the Will. The surest method of banishing an

unpleasant dream is to turn in the bed. Continuance in the same posture and with the same pressure of blood within and of the pillow without upon the same part of the brain seems to preserve the action of the dream, which is disturbed at once by directing the flow of blood and the pressure to another part of the brain. If a sleeper is seen to be agitated in his sleep by painful dream, exhibited in moaning, restlessness and expression of distress upon the countenance, remedy may be found in gently moving the head into another position, if the body cannot be moved and it is not desired to waken.

It is said that musicians are very prone to the composition of music in dream. It was thus that Tartini wrote the Devil's Sonata. The most unmusical are often haunted by scraps of tune that no effort will banish. Airs are composed in dream which are remembered upon waking. Perhaps it is not that music is more the subject of dream than other mental creations, but it is the most capable of being retained by the mind and expressed after the dream has vanished. My own experience of this capacity of the dreaming mind has been to myself very surprising; but perhaps the like may have occurred to others, although not recorded. Some time ago I dreamed that I was present and heard as well as witnessed the performance of an entire opera of my own composing. The strange part of it was that I am

not a musician and never composed a bar of music in my life. I have a bad musical ear and no musical memory. Yet did my utterly unmusical mind in the dream compose the whole of an opera in two acts, overture and all, with a full band and half a dozen characters, each acting his own part, and the stage, the scenery, machinery and decorations, as perfect as any I have ever beheld and enjoyed at Covent Garden. Certainly it was not a mere dream of a dream. What other solution is there than this—and it is sufficiently marvellous—that my mind, free to act without the incumbering trammels of the sleeping body and exercising its unfettered faculties far beyond their capacity in waking life, had made me a musician, a dramatist, an actor, a painter—for all these that mind was in the invention and performance of that dream? If that mind or Soul be nothing more than the material form, or a function of that form, how comes it that it is more active and that its faculties are more exalted when the body, of which it is said to be a part, is asleep? If the mind or soul be a part of the body, or, as the Materialists contend, a mere function of the body, it ought, according to all known laws of science, to be sleeping with the body, or at least its activity and capacity ought not to increase in proportion as the activity and capacity of the body decrease.

I have here used the term "Mind," because it is familiar to the reader, and any other name would

mislead by the prejudices that attach to it. But I must be understood as intending by that term the thing, whatever it be, which, in the Mechanism of Man, directs and controls it intelligently, whether it be called Soul or Mind, and if it be a distinct entity, as Psychology contends, or only the product of the material structure, as the Materialists assert. This, indeed, is the great problem of this age, to be solved, not by dogmatic assertions, but by scientific proof.

There are many other Phenomena of Dream of less interest or importance, the description of which would occupy many pages; but those above will suffice for the purposes of this monograph.

CHAPTER XI.

CONCLUSIONS.

THIS view of the Physiology and Psychology of the very familiar but very marvellous condition of Sleep and Dream seems to conduct the inquirer to some conclusions, whose importance and interest it would be impossible to exaggerate; for, if there be any truth in them, they point directly to revelations of the hidden structure of the Mechanism of Man, which have been taught as a dogma and accepted as a faith, but for the proof of which by science as a fact in nature evidence has hitherto been wanting.

The condition of Sleep indicates a *dual* structure —that mind and body are not one, as the Materialists teach; for when the body sleeps the mind is awake, and often the mind is more active and more able when it is thus partially released from the burden of the body.

In sleep the phenomena of dream exhibit this independence of the body yet more powerfully. The mind lives a life of its own, with its own measurements of time and space, so different from

those to which it is limited by the material structure of the body.

Self-consciousness is preserved in dream while the mind is inventing a whole drama of events and persons, so that we contemplate the work of the mind as if it was something existing without. This proves that the contemplating consciousness is something other than the thing contemplated. The "I" that views and remembers the action of the brain (which is the material organ of the mind) cannot be the brain itself, nor the mind itself, but must be something distinct from either, although intimately associated with both.

That conscious and contemplating something is the *thing*—the entity—the "I"—the "You"—the being—the individual—which may be called "Soul" or "Spirit," or by any other name, but which we intend to designate when we use those terms.

These phenomena go far to prove that Man is a "living Soul" clothed with a material body—that this Soul is in fact the person—the individual—the being—of whom the molecular body is but the incrustation, the atoms agglomerated into molecules at the point of contact with the molecularly constructed world in which the present stage of its existence is to be passed.

True it is that the phenomena of dream, while throwing so much light upon the structure of the mind and the manner of its action and going far to prove the existence of Soul, does not impart to us

any knowledge of the structure of Soul. But we may learn this much, that although it is imperceptible by any of our senses, which are constructed to perceive only that form of matter we call molecular, it is not also and therefore unknowable, as the materialists contend. The existence of Soul can be proved in precisely the same manner as the existence of electricity and magnetism and heat are proved, which also are imperceptible by our senses, but not therefore unknowable. We learn the fact of their being by their operations upon the molecular structure our senses are constructed to perceive. In like manner we learn something of their qualities and powers. The process of proof is identical. If it be admissible evidence for the one, it is no less admissible for the other. To what extent it goes in the way of proof of the existence of Soul is, of course, a fair question for argument and investigation. My contention is only that the inquiry "if Soul be" must not be permitted to be summarily disposed of by any such dogmatic dictum of Physicists as that Soul not being perceptible to our senses is incapable of proving its existence through the senses, and therefore is, and must ever remain, unknowable and consequently a vain pursuit and an impossible Science.

In the phenomena of dream we find abundant proof that there is something other than the sleeping molecular structure that does not sleep—that the individual "I" preserves its consciousness

of identity, its sense of oneness in dream. This something cannot well be the body contemplating itself—at once the actor and the spectator. Reason concludes that it must be one thing contemplating another thing and Psychology contends that this contemplating thing that wakes and dreams when the body is asleep is what has been called by many names, but which here is designated as "Soul," without affirming anything of its structure, its nature, its qualities, or its destiny.

SESSION 1876-7.

1. The Progress and Prospects of Psychology." Second Sessional Address by the President.
2. "Some Applications of the Theory of Unconscious Cerebration," by Mr. C. C. Massey.
3. The Phenomena of Artificial Somnambulism and Electro-Biology," by Mr. E. H. Valter.
4. "The Human Voice Considered Psychologically," by Professor Plumptre.
5. "Some more Phenomena of Sleep and Dream," by Mr. Serjeant Cox.
6. "Cerebral Psychology," by Mr. Charles Bray.
7. "The Human Voice Considered Psychologically" (Second Paper), by Prof. Plumptre.
8. "*The Psychological Aspect of Molecular Motion*," by Mr. James Croll, F.R.S.
9. "Certain Psychological Peculiarities Observable in the Hereditary Transmission of Endowments and Qualities," by Mr. Geo. Harris, F.S.A.
10. "A Record of Abnormal Personal Experiences," communicated through Mr. C. C. Massey.
11. "*Natural Law: Automatic Mind and Unconscious Intelligence*," by Mr. Charles Bray.
12. "The Psychology of Wit and Humour" (Second Paper), by Mr. Serjeant Cox.

Persons desirous of joining the Society are requested to apply by post, in the following form, to the Honorary Secretary, FRANCIS K. MUNTON, addressed to him at the offices of the Society, 11, Chandos-street, Cavendish-square, W., or Willesden, N.W.

To the Honorary Secretary of the PSYCHOLOGICAL SOCIETY OF GREAT BRITAIN.

Being desirous to become a Member of this Society, I will thank you to propose me to the Council accordingly.

*Name (in full)*_____

*Profession or Designation*_____

*Address*_____

*Dated*_____

N.B.—Candidates for Membership, not known to any member of the Council, are requested to refer to some resident in London.

Forms of application to become Members, prospectuses of the Society, notices of the days and places of meeting, and of the subjects to be discussed, the publications of the Society, and all information, may be had on application to the Honorary Secretary, at the Offices of the Society, 11, Chandos-street, Cavendish-square, W.

PAPERS PUBLISHED.

1. The Inaugural Address of the President, Mr. Serjeant Cox, on "The Province of Psychology." Price 1*s*.
2. On "Some of the Phenomena of Sleep and Dream," by Mr. Serjeant Cox (May 12, 1875). Price 6*d*.
3. "The Psychology of Memory," by George Harris, LL.D. Price 6*d*.
4. "The Duality of the Mind," by Mr. Serjeant Cox. Price 6*d*.
5. "Caligraphy Considered as affording a Test of Character," by GEORGE HARRIS, Esq., LL.D. Price 6d.
6. Report of the Proceedings of the Society, No. 1. Price 6d.
7. Address of the President on the opening of the Second Session of the Society. Price 6*d*.
8. "Matter and Spirit," by Mr. Serjeant Cox. Price 6*d*.
9. "The Psychology of Memory and Recollection," by Mr. Serjeant Cox. Price 6*d*.
10. "Progress and Prospects of Psychology." Third Sessional Address, by the President. Price 6*d*.
11. "Some More Phenomena of Sleep and Dream," by Mr. Serjeant Cox. Price 6*d*.
12. "Psychology Proved by Physical Science," by James Croll, Esq., F.R.S. Price 6*d*.
13. "Cerebral Psychology," by Mr. Charles Bray.
14. "Natural Law, Automatic Mind, and Unconscious Intelligence," by Mr. Charles Bray.
15. "Has Man a Soul?" The Fourth Sessional Address of the President. Price 6*d*.

Notice.—Copies of any of the above sent free by post to any person enclosing the price in stamps, with one stamp for postage, to the Honorary Secretary, as above.

Papers presented for reading must be sent to the Honorary Secretary for previous approval by the Council. No paper must exceed twenty minutes in the reading.

Communications of PSYCHOLOGICAL FACTS *and* PHENOMENA *are invited, but they must be duly authenticated by the name and address of the correspondent. Such name will, however, if desired, be held in strict confidence. No notice will be taken of any annoymous communication.*